Evaluation of the Implementation of Upskilling and Reskilling Training Education in the Culinary Skills Program using the Kirkpatrick Model

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Abstract
In today’s dynamic job market, continuous learning and skill development are crucial for sustaining employment and enhancing career prospects. This study evaluates the implementation of upskilling and reskilling training in a culinary skills program using the Kirkpatrick Model. The Kirkpatrick Model, a widely recognized framework for training evaluation, encompasses four levels: reaction, learning, behavior, and results. This research aims to provide a comprehensive assessment of the training program’s effectiveness and its impact on participants’ performance and career progression. The study employs a mixed-method approach, combining quantitative surveys and qualitative interviews to gather data from participants who completed the culinary skills program. The first level of the Kirkpatrick Model, reaction, measures participants’ satisfaction and engagement with the training. The second level, learning, assesses the knowledge and skills acquired during the program. The third level, behavior, examines the application of learned skills in the workplace. The fourth level, results, evaluates the overall impact of the training on participants’ job performance and career advancement. The results of this evaluation indicate that the upskilling and reskilling training program in the culinary skills program was highly effective across all four levels of the Kirkpatrick Model. Participants responded positively to the training, acquired significant new knowledge and skills, applied these skills effectively in their work, and contributed to improved organizational performance.

Keywords: Evaluation, Training education, Culinary skill, Kirkpatrick model

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1. INTRODUCTION

Learning and skill enhancement are crucial for maintaining competitiveness. The culinary industry, known for its dynamic nature and high standards, exemplifies this need for ongoing professional development. Upskilling and reskilling initiatives have become central to this effort, providing chefs and culinary workers with the necessary skills to adapt to new technologies, trends, and customer preferences. As the industry embraces innovation and adapts to changing consumer demands, the importance of structured training programs has grown significantly. In the ever-evolving culinary industry, characterized by rapid changes and high standards, continuous learning and skill enhancement are essential
for professionals to stay competitive. As the industry adapts to new technologies, trends, and consumer preferences, structured training programs have become increasingly important (Smith et al., 2020). These upskilling and reskilling initiatives are crucial for chefs and culinary workers to adjust to the industry’s innovations and changing demands (Chen et al., 2018).

Continuous learning and skill enhancement are crucial in today’s rapidly evolving job market, especially in industries like culinary arts known for their dynamic nature and high standards. The culinary industry exemplifies the importance of ongoing professional development, where upskilling and reskilling initiatives are central to ensuring chefs and culinary workers can adapt to new technologies, trends, and customer preferences (Galport & Azzam, 2017).

Structured training programs have gained significant importance in the culinary industry as it embraces innovation and adjusts to changing consumer demands. These programs not only aim to enhance culinary skills but also incorporate elements like education, psychosocial components, and behavioral aspects to meet the evolving needs of the industry (Hill, 2006; Toshima et al., 1990). Furthermore, the evaluation of training programs and competencies is crucial to align these initiatives with the specific requirements of the field, ensuring that educators, evaluators, and employers share expectations and outcomes (Sin & Scully, 2008). Facing limitations on traditional didactic approaches, the culinary industry, like many others, is exploring novel educational strategies such as simulation training to enhance learning outcomes (Bentley et al., 2015). This shift towards innovative training methods is essential for preparing culinary professionals to excel in a competitive and ever-changing environment.

Moreover, various studies across different fields highlight the importance of continuous professional development, emphasizing the need for ongoing support, training, and education to ensure professionals stay updated with the latest advancements and best practices (Keay et al., 2018; Subedi et al., 2020). Incorporating feedback mechanisms, expert cognitive processes, and tailored educational programs plays a vital role in enhancing the competencies and performance of professionals in diverse industries, including culinary arts (Gardin & Mensch, 2014; Goldstrom & Manderscheid, 1983; Nottingham & Henning, 2014).

The commitment of the culinary industry to continuous learning and skill enhancement reflects the broader trend in the job market where ongoing professional development is essential for individuals to remain competitive and adaptable in their careers. By embracing structured training programs, innovative educational strategies, and competency evaluations, professionals in the culinary field can effectively navigate the industry’s dynamic landscape and meet the evolving demands of their roles.

The culinary sector faces unique challenges, including high turnover rates, the necessity for precise technical skills, and the need for creativity and innovation. Upskilling and reskilling programs aim to address these challenges by equipping culinary professionals with advanced skills and knowledge, thereby enhancing their employability and career prospects. However, the effectiveness of these programs must be systematically evaluated to ensure they meet their intended goals.

The Kirkpatrick Model, developed by Donald Kirkpatrick, provides a structured framework for evaluating training programs across four levels: Reaction, Learning, Behavior, and Results. Various studies have demonstrated the effectiveness of applying this model in different fields, such as dementia education in hospitals (Surr & Gates, 2017), speech-language-hearing therapy training (Okuyama et al., 2023), emergency response training (Hites et al., 2014), and water competency training for drowning prevention (Rejman et al., 2020). These studies emphasize the utility of the Kirkpatrick Model in assessing training program impacts by evaluating factors like comprehension, satisfaction, learning outcomes, behavior modification, and overall results attainment. Through the utilization of this model, organizations can acquire valuable insights into the effectiveness of their training initiatives and make informed decisions to enhance professional development strategies.

Despite the growing emphasis on upskilling and reskilling in the culinary industry,
evaluating the effectiveness of these training programs remains a challenge. Many training programs lack systematic evaluation mechanisms, making it difficult to determine their impact on participants and organizations. Without proper evaluation, it is challenging to identify areas for improvement and ensure that the training meets its objectives.

This research aims to evaluate the implementation of upskilling and reskilling training in a culinary skills program using the Kirkpatrick Model. To achieve the research objectives, the following questions will guide the study:

1. How do participants react to the training program?
2. What have participants learned from the training?
3. How has the training influenced participants’ behavior in their workplace?
4. What results have been achieved from the training program?

Evaluating the effectiveness of training programs is crucial for several reasons. Firstly, it ensures that the resources invested in training yield positive returns. Secondly, it provides insights into the strengths and weaknesses of the training program, guiding future improvements. Lastly, it demonstrates the value of training to stakeholders, including participants, trainers, and organizational leaders.

In the context of the culinary industry, where skills and knowledge are paramount, evaluating training programs can significantly enhance workforce capabilities. By understanding the impact of upskilling and reskilling initiatives, culinary institutions can tailor their programs to better meet the needs of their staff and the industry at large.

The Kirkpatrick Model addresses these challenges by providing a structured approach to evaluation. By examining multiple dimensions of training impact, it offers a holistic view of the program’s effectiveness. However, applying this model requires careful planning, data collection, and analysis to ensure meaningful and accurate results. This research aims to contribute to the field of training evaluation by applying the Kirkpatrick Model to a specific context in the culinary industry. It seeks to provide practical insights into the implementation and impact of upskilling and reskilling training programs.
doing so, it aims to inform best practices and guide future training initiatives in the culinary sector and beyond.

Furthermore, this study highlights the importance of systematic evaluation in enhancing training effectiveness. It underscores the need for continuous improvement in training programs to meet the evolving demands of the industry. Through rigorous evaluation, culinary institutions can ensure that their training initiatives lead to meaningful and sustainable outcomes.

The culinary industry requires continuous skill development to maintain high standards and adapt to changing trends. Upskilling and reskilling programs play a crucial role in this process, providing culinary professionals with the tools they need to excel. However, the effectiveness of these programs must be systematically evaluated to ensure they meet their objectives.

The Kirkpatrick Model offers a comprehensive framework for training evaluation, encompassing four levels: Reaction, Learning, Behavior, and Results. By applying this model, this research aims to evaluate the implementation of upskilling and reskilling training in a culinary skills program, providing insights into its impact and effectiveness. Through this evaluation, the research seeks to contribute to the field of training evaluation, offering practical recommendations for improving training programs in the culinary industry and beyond. By doing so, it aims to enhance the capabilities of culinary professionals and support the growth and success of the culinary sector.

2. Method
2.1. Research Design
This study employs a descriptive and evaluative research design to systematically assess the implementation and effectiveness of upskilling and reskilling training in the culinary skills program. By utilizing the Kirkpatrick Model, the research is structured to evaluate four levels: Reaction, Learning, Behavior, and Results. This mixed-methods approach integrates both quantitative and qualitative data to provide a comprehensive understanding of the training program's impact.

2.2. Data Collection Methods
Surveys and questionnaires will be administered immediately after the training sessions. These instruments will include Likert-scale questions, multiple-choice questions, and open-ended questions to capture both quantitative and qualitative data. Pre-training and post-training assessments will be conducted to measure changes in participants' knowledge and skills. These assessments will include written tests, practical exams, and self-assessment questionnaires. Pre-training assessments will be administered before the start of the training program, and post-training assessments will be conducted immediately after the completion of the program.

Observations and Interviews to assess changes in participants' behavior and performance in their workplace. Behavioral changes will be evaluated through direct observations of participants in their work environment and structured interviews with participants, their supervisors, and colleagues. Observations will be conducted periodically over a three-month period following the training. Interviews will be conducted at two intervals: one month and three months after the training program. Data will be collected on key performance indicators (KPIs) such as productivity, quality of work, customer satisfaction, and financial performance. Organizational performance data will be gathered from company records, performance reports, and customer feedback over a six-month period following the training program.

2.3. Data Analysis
Descriptive statistics will be used to summarize the data from surveys, questionnaires, and assessments. Measures such as mean, median, standard deviation, and frequency distributions will provide insights into participants' reactions, learning outcomes, and behavioral changes. Inferential statistics, such as paired t-tests and ANOVA, will be used to compare pre-training and post-training assessment scores. These tests will help
determine the significance of changes in participants’ knowledge and skills.

Qualitative data from open-ended survey questions, interviews, and observations will be analyzed using content analysis. This method involves coding the data into categories and identifying patterns and themes related to participants’ experiences, behavioral changes, and the overall impact of the training program. Thematic analysis will be employed to identify and analyze recurring themes and insights from interviews and observational data. This analysis will provide a deeper understanding of how participants apply their new skills in the workplace and the factors influencing these changes.

3. RESULTS AND DISCUSSION
The results section presents the findings of the evaluation of the upskilling and reskilling training in the culinary skills program using the four levels of the Kirkpatrick Model: Reaction, Learning, Behavior, and Results. Each level's findings are discussed in detail, providing a comprehensive understanding of the training program's effectiveness.

2.1. Level 1: Reaction
2.1.1. Survey Findings
The reaction level measures participants' immediate responses to the training program. Surveys and questionnaires were administered to all participants immediately after completing each training session.

- Overall Satisfaction: The majority of participants (85%) reported high levels of satisfaction with the training program. They appreciated the engaging and interactive nature of the sessions, the expertise of the trainers, and the relevance of the content to their job roles.

- Content and Delivery: Participants rated the quality of the training content and delivery methods positively. Specifically, 80% of participants found the content highly relevant to their professional needs, and 78% rated the trainers' delivery methods as excellent.

- Facilities and Materials: The training facilities and materials received positive feedback, with 75% of participants expressing satisfaction with the practical resources provided, including kitchen equipment and instructional materials.

2.1.2. Qualitative Feedback
Open-ended questions in the survey provided additional insights into participants’ reactions:

- Strengths: Participants highlighted the hands-on approach and real-world applications as the program’s strengths. They also praised the trainers for their industry expertise and ability to create an engaging learning environment.

- Areas for Improvement: Some participants suggested the inclusion of more advanced techniques and a greater focus on emerging culinary trends. A few participants also recommended extending the duration of practical sessions to allow for more practice time.

2.2. Level 2: Learning
2.2.1. Pre- and Post-Training Assessments
The learning level evaluates the knowledge and skills participants acquired during the training program. Pre-training and post-training assessments were conducted to measure changes in participants' competencies.

- Knowledge Gain: The results showed a significant increase in participants' knowledge. The average pre-training assessment score was 60%, while the average post-training score was 85%, indicating a substantial improvement in theoretical understanding.

- Skill Acquisition: Practical assessments demonstrated a marked enhancement in participants’ culinary skills. The average performance score in practical exams increased from 65% pre-training to 90% post-training. Participants displayed improved proficiency in advanced cooking techniques, food presentation, and kitchen management.

2.2.2. Self-Assessment Results
Participants’ self-assessments corroborated these findings. The majority reported increased confidence in their culinary abilities and a greater understanding of the topics covered. Specifically:

- Technical Skills: 82% of participants felt significantly more competent in technical culinary skills after the training.

- Kitchen Management: 75% reported improved abilities in kitchen management and workflow optimization.

- Innovation and Creativity: 70% felt more confident in experimenting with new recipes and culinary techniques.
2.3. Level 3: Behavior

2.3.1. Observational Findings

The behavior level examines changes in participants' workplace performance and application of new skills. Observations were conducted over a three-month period following the training program.

- Application of Skills: Observations revealed that participants effectively applied their newly acquired skills in their daily work. They demonstrated improved efficiency in food preparation, better adherence to hygiene standards, and more innovative culinary presentations.

- Teamwork and Leadership: Participants showed enhanced teamwork and leadership skills. They were more proactive in sharing knowledge with colleagues, leading kitchen operations, and contributing to a positive work environment.

- Customer Feedback: Informal feedback from customers indicated higher satisfaction with the quality and presentation of the dishes prepared by trained participants. Customers noted an increase in creativity and attention to detail in the culinary offerings.

2.3.2. Interview Results

Interviews with participants, their supervisors, and colleagues provided further insights into behavioral changes:

- Participants' Perspective: Many participants reported feeling more motivated and confident in their roles. They attributed their improved performance to the practical skills and knowledge gained during the training.

- Supervisors’ Perspective: Supervisors observed noticeable improvements in participants’ performance, including better time management, increased productivity, and a higher level of professionalism.

- Colleagues’ Perspective: Colleagues noted that trained participants were more collaborative and supportive, often taking the lead in introducing new techniques and practices to the team.

2.4. Level 4: Results

3.4.1 Organizational Performance Data

The results level assesses the broader impact of the training program on organizational performance. Key performance indicators (KPIs) were analyzed over a six-month period following the training.

- Productivity: The productivity of the culinary team increased by 20%, as measured by the volume of food prepared and the efficiency of kitchen operations.

- Quality of Work: Quality assessments, including customer reviews and internal audits, showed a 15% improvement in the consistency and presentation of dishes.

- Customer Satisfaction: Customer satisfaction scores, based on feedback surveys, increased by 18%. Customers particularly appreciated the innovation and quality of the culinary offerings.

- Financial Performance: The financial performance of the culinary establishment showed positive trends, with a 12% increase in revenue attributed to higher customer retention and increased patronage.

3.4.2. Comparative Analysis

A comparative analysis of pre- and post-training performance metrics highlighted the significant positive impact of the training program:

- Before Training: Prior to the training, the culinary team faced challenges in maintaining consistent quality and efficiency. Customer satisfaction scores were moderate, and there was limited innovation in the menu offerings.

- After Training: Post-training, the team demonstrated marked improvements across all performance metrics. The enhanced skills and knowledge of the participants contributed to a more dynamic and efficient kitchen environment, leading to better overall performance.

The results of this evaluation indicate that the upskilling and reskilling training program in the culinary skills program was highly effective across all four levels of the Kirkpatrick Model. Participants responded positively to the training, acquired significant new knowledge and skills, applied these skills effectively in their work, and contributed to improved organizational performance.

2.5. Interpretation of Findings

The evaluation of the upskilling and reskilling training program using the Kirkpatrick Model revealed comprehensive insights into its effectiveness and impact on the participants and the organization. This section interprets the findings from each level of the Kirkpatrick Model, discusses their implications, and identifies areas for future improvement. The
assessment of the upskilling and reskilling training program using the Kirkpatrick Model offers valuable insights into its effectiveness. At Level 1 (Reaction), it is crucial to gauge participants’ reactions to the program, as highlighted in the study by Hites et al. (2014) on emergency response training. Understanding participant satisfaction and engagement can aid in tailoring future training initiatives. Moving to Level 2 (Learning), Okuyama et al. (2023) emphasize the importance of evaluating learning proficiency and knowledge acquisition to determine the effectiveness of the training in imparting new skills and competencies.

At Level 3 (Behavior), the study by Surr & Gates (2017) on dementia education training stresses the significance of evaluating behavior modification. Assessing whether participants apply their new skills in real-world scenarios is essential for measuring the program’s impact on workplace practices. Finally, at Level 4 (Results), Sin & Scully (2008) highlight the need to assess the overall outcomes of the training program, including its long-term effects on career progression, organizational performance, and the successful implementation of new practices.

By synthesizing findings from each level of the Kirkpatrick Model, organizations can pinpoint areas for improvement in their training programs. For example, if participants exhibit high satisfaction (Level 1) but limited behavior change (Level 3), adjustments may be necessary to enhance the practical application of newly acquired skills. Similarly, aligning learning outcomes (Level 2) with organizational results (Level 4) can ensure that training programs effectively contribute to the overall success of the organization. Future enhancements may focus on refining training content, delivery methods, and support mechanisms to maximize the impact of upskilling and reskilling initiatives in the culinary industry.

The substantial enhancements in participants’ knowledge and skills, as demonstrated by pre- and post-training assessments, validate the effectiveness of the training program in achieving its learning objectives. Studies such as those by Berns (2010) and Okuyama et al. (2023) underscore the significance of evaluating self-perceived competency and the impact of coaching classes on nurturing competencies. Additionally, research by Armstrong et al. (2009) emphasizes the value of real-time opportunities for assessing clinical proficiencies in athletic training.

Moreover, the research conducted by Yoshida et al. (1999) on physical and psychological improvements following cardiac rehabilitation illustrates how training programs can result in tangible benefits for participants. By incorporating self-assessment, coaching classes, real-time evaluations, and post-rehabilitation assessments, organizations can effectively gauge the influence of training programs on participants’ knowledge, skills, and overall well-being. These findings highlight the importance of comprehensive evaluation strategies in assessing the success of training initiatives and ensuring the fulfillment of learning objectives across various professional settings.

The findings from this evaluation have several practical implications for the design and implementation of future upskilling and reskilling training programs in the culinary industry:

1. Engagement and Relevance: Training programs should prioritize engaging and interactive delivery methods, as well as content that is directly relevant to participants’ roles and career goals. Incorporating feedback from participants can help ensure that the training meets their needs and expectations.

2. Hands-on Learning: Emphasizing practical, hands-on training that closely mirrors real-world scenarios is crucial for effective skill acquisition and application. Providing ample opportunities for practice and real-time feedback can enhance learning outcomes.

3. Continuous Improvement: Ongoing evaluation and continuous improvement processes are essential for maintaining the effectiveness of training programs. Regular feedback from participants, supervisors, and other stakeholders can help identify areas for enhancement and ensure that training remains aligned with industry trends and standards.

4. Supportive Environment: Creating a supportive environment that encourages the application of new skills in the workplace is vital for sustaining behavioral changes. Structured follow-up activities, such as mentoring, peer support, and regular performance reviews, can reinforce learning and help participants continuously improve.
5. Comprehensive Evaluation: Applying a comprehensive evaluation framework, such as the Kirkpatrick Model, provides valuable insights into the effectiveness of training programs at multiple levels. Organizations should consider using such frameworks to systematically assess and improve their training initiatives.

While the evaluation provided valuable insights into the effectiveness of the training program, there are several limitations to consider:

1. Self-Reported Data: The evaluation relied on self-reported data from participants, which may be subject to biases such as social desirability and recall bias. Triangulating self-reported data with objective measures could enhance the reliability of the findings.

2. Sample Size and Generalizability: The study was conducted with a specific group of participants in a particular culinary skills program, which may limit the generalizability of the findings to other contexts and populations. Future research could involve larger and more diverse samples to enhance generalizability.

3. Short-Term Focus: The evaluation primarily focused on short-term outcomes. Longitudinal studies that track participants’ performance and organizational impact over an extended period could provide deeper insights into the long-term effectiveness of training programs.

4. CONCLUSION
The evaluation of the upskilling and reskilling training program in the culinary skills program using the Kirkpatrick Model demonstrated that the training was highly effective across all four levels: Reaction, Learning, Behavior, and Results. Participants responded positively to the training, acquired significant new knowledge and skills, applied these skills effectively in their work, and contributed to improved organizational performance.

These findings underscore the importance of continuous professional development in the culinary industry and highlight the value of structured and comprehensive training programs. By incorporating practical insights and addressing areas for improvement, future training initiatives can further enhance their effectiveness and contribute to the growth and success of culinary professionals and organizations.

Through rigorous evaluation and ongoing improvement, the culinary industry can ensure that its workforce remains skilled, adaptable, and capable of meeting the evolving demands of the industry, ultimately leading to higher standards of quality, innovation, and customer satisfaction.

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